



TENNESSEE DEPARTMENT OF

EDUCATION
FIRST TO THE TOP

Health Information Technology

Primary Career Cluster:	Health Science
Consultant:	Amy F. Howell, (615) 532-2839, Amy.F.Howell@tn.gov
Course Code:	5997
Prerequisite(s):	<i>Medical Terminology</i> (5883)
Credit:	1
Grade Level:	11-12
Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other Health Science courses.
Programs of Study and Sequence:	This is the third course in the <i>Health Informatics</i> program of study.
Aligned Student Organization(s):	HOSA: http://www.tennesseehosa.org Amanda Hodges, (615) 532-6270, Amanda.Hodges@tn.gov
Coordinating Work-Based Learning:	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit http://tn.gov/education/cte/work_based_learning.shtml .
Available Student Industry Certifications:	None
Dual Credit or Dual Enrollment Opportunities:	A statewide dual credit challenge examination exists for this course for students to earn dual credit at Tennessee public postsecondary institutions that offer health science. For more information, please visit http://www.tn.gov/education/opca/ .
Teacher Endorsement(s):	577, 720, 721, 722
Required Teacher Certifications/Training:	None
Teacher Resources:	http://www.tn.gov/education/cte/HealthScience.shtml

Course Description

Health Information Technology is a third-level applied course in the *Health Informatics* program of study intended to prepare students with an understanding of the changing world of health care information. With the inclusion of electronic medical records, electronic billing, and electronic prescriptions, students

in all healthcare professions must increasingly demonstrate competency in health information and health informatics. Upon completion of this course, proficient students will be able to differentiate among the types of health information/informatics, code and manage medical records, retrieve crucial data from health information systems and indexes, and understand the implications for careers in a range of health care fields. Standards in this course are aligned with Tennessee State Standards for English Language Arts & Literacy in Technical Subjects and Tennessee State Standards in Mathematics.*

Program of Study Application

This is the third course in the *Health Informatics* program of study. For more information on the benefits and requirements of implementing this program in full, please visit the Health Science website at <http://www.tn.gov/education/cte/HealthScience.shtml>.

Course Standards

Careers

- 1) Define the broad field of informatics and discuss its increasing importance in health care. Compare and contrast the types of healthcare informatics, such as medical, clinical, biomedical, nursing, public health, and information science. Identify the impact each of these areas of informatics has had on its corresponding sector of healthcare. (TN Reading 2, 7; TN Writing 4, 6, 8, 9)
- 2) Research careers within the healthcare informatics, health information management, and health information technology fields, and document educational requirements as well as state and national guidelines governing practicing professionals (such as licensing, certifications, training, and compliance). Using real-time and projected labor market data, identify local and national employment opportunities and determine areas of growth. Complete a job application, resume, and cover letter for one of the jobs located in the search. (TN Writing 2, 7, 8, 9)
- 3) Compare and contrast the history of health informatics with projected developments and innovations expected in the future. Discuss in an oral, digital, or written presentation the relationship between major issues in healthcare and the changes in health information technology. (TN Reading 2, 8; TN Writing 4, 6)
- 4) Analyze an ethical issue related to health informatics, such as ownership of and access to data, or the debate around respecting the privacy of individuals versus promoting the public good in the disclosure of health threats like HIV/AIDS and avian flu. Relate the findings of the research to the International Medical Informatics Association and American Health Information Management Association (AHIMA) Code of Ethics for Health Information Professionals. (TN Reading 1, 2, 6; TN Writing 2, 9)

Medical Records

- 5) Summarize the purposes and functions of the patient health record. Identify the purpose of each of the following components:
 - a. History and Physical
 - b. Discharge summary

- c. Progress notes and orders
 - d. Nursing notes
 - e. Operative reports
 - f. Preoperative and postoperative anesthesia notes
 - g. Pathology reports
 - h. Consultation reports
 - i. Medication administration records
 - j. Consent forms
 - k. Ancillary reports (X-ray, lab, therapy reports)
 - l. Advance Directives (Do Not Resuscitate, living will, power of attorney, specialty records such as in OB, ER, and nursery)
- (TN Reading 2, 4, 8; TN Writing 4, 9)

- 6) Compose a list of clinical health information data points for alternative care settings including but not limited to ambulatory care, behavioral health, stand-alone clinical laboratory, home care, long-term care, stand-alone surgical center, and walk-in/urgent care clinics. For example, list all the typical diagnostic information collected as part of a routine physical. For each setting examined, explain why certain data points are of more interest or importance to the healthcare provider in that particular setting. (TN Reading 2, 3, 4; TN Writing 4, 8, 9)
- 7) Explain the guidelines surrounding medical record storage, control, and retention as prescribed by local, state, and federal regulations. (TN Reading 2; TN Writing 4, 9)
- 8) Compare and contrast numbering and filing systems used in health information departments. Differentiate among and be able to retrieve files using the following health record numbering systems: enterprise-wide numbering, unit numbering, serial numbering, and serial-unit numbering. (TN Reading 3, 4; TN Writing 6, 7)
- 9) Compare and contrast qualitative and quantitative record analysis, then practice the skill of assembling a patient health record. Apply alphabetical, numerical, and terminal digit filing methods to patient records. Analyze the record for completeness and accuracy. (TN Reading 3, 4)
- 10) Using correct medical terminology and authentication of patient record entries, compare and contrast the standards from external agencies (such as the Joint Commission and AHIMA) and facility policies regarding provider documentation responsibilities. Refer to the American Society for Testing and Materials (ASTM) publication ASTM E2369-12 Standard Specification for Continuity of Care Record. (TN Reading 4, 9; TN Writing 4, 9)

Electronic Health Records

- 11) Define Electronic Health Record (EHR) and briefly explain its emergence and evolution. Compare the advantages and disadvantages of manual versus automated record systems. Identify barriers and challenges associated with the large-scale move to EHR in healthcare institutions. (TN Reading 2, 9; TN Writing 4, 9)
- 12) Research how the Affordable Care Act and the American Recovery Reinvestment Act, Public Law 111-5 have impacted the evolution and integration of Electronic Health Records. Citing specific

textual evidence from the laws, together with professional and scholarly commentary, debate whether these changes will benefit consumers and healthcare providers, and analyze the short-term and long-term consequences. (TN Reading 2, 8, 9; TN Writing 1)

Health Information Systems

- 13) Identify the multiple indexes maintained by health care facilities and state and federal agencies, and create a brief profile of each based on evidence drawn from case studies. Record in the profile the content, significance, purpose, development, and maintenance of indexes such as the master patient index, disease index, and operation index. (TN Reading 2, 9; TN Writing 4, 9)
- 14) Investigate the major parameters most frequently reported in health databases, including descriptive health care statistics and hospital-based statistics. Review a case scenario involving health care statistics and summarize the statistical information into a bar graph, pie chart, scatterplot, or other graphical representation. Identify the characteristics, units, and standards of each parameter, including applicable medical terminology. (TN Reading 1, 7, 8, 9; TN Writing 4, 6; TN Math N-Q, S-ID)
- 15) Differentiate between the terms *registries* and *registers* and detail the characteristics of each. Review data from the National Center for Health Statistics (NCHS) in order to develop a vital statistics depiction of a community. Record items such as births per thousand, deaths, fetal death, marriages, divorces, and maternal health information in an electronic spreadsheet or chart. (TN Reading 4, 7, 8; TN Writing 4, 6, 7)
- 16) Develop a digital or paper presentation to illustrate the purpose, content, and use of registries in the United States, such as:
 - a. Tumor Registry
 - b. Birth Registry
 - c. Trauma Registry
 - d. Brain Injury Registry
 - e. Implant Registry
 - f. Immunization Registry
 - g. Diabetes Registry(TN Reading 2, 4, 6, 7; TN Writing 4, 6, 9)

Legal Ramifications of Health Information

- 17) Summarize the Health Insurance Portability and Accountability Act (HIPAA) and applicable state laws to explain methods of ensuring data security and confidentiality by controlling access and release of information. Develop a policy and procedure explaining the process for providing access to health records for a variety of third parties, including but not limited to state licensing boards, court systems (i.e., in the event a subpoena is issued), insurance companies, law enforcement, government agencies, employers, and other health care providers. (TN Reading 2, 4, 8, 9; TN Writing 2, 4, 8)
- 18) Explain in a written, oral, or digital format the differences in privacy of individually identifiable health information, protected health information (PHI), and security rule. Review case studies to

identify violations, preventive measures, and penalties that might be levied for violations. (TN Reading 2, 4, 8, 9; TN Writing 4, 9)

- 19) Research major federal and state legislation that has impacted health information management. Identify the law or regulation, the year it was instated, the sponsor(s) of the legislation, a description of its content, any justification provided for its passage, and a case that has used the legislation in the defense on the patient/client's behalf. (TN Reading 2, 8, 9; TN Writing 4)
- 20) Identify emerging technologies and practices related to health information, such as the use of mobile technologies, consumer outline to health records, and evidenced-based practices. Argue the ethical and legal complications associated with these practices. (TN Reading 2, 4; TN Writing 1, 4)
- 21) Investigate identify theft and fraud associated with electronic health information. Develop a Public Service Announcement for the elderly or other vulnerable population to alert them to the problems and explain how to prevent fraud or theft of their health care information. (TN Reading 2, 5; TN Writing 4, 6)

Coding and Reimbursement

- 22) Design a comprehensive teaching brochure for a new patient that explains the multiple sources of reimbursement in healthcare services and how medical records can affect the reimbursement rate. Report on areas such as capitation, Medicare, TennCare, prospective payment systems, Relative Value Resource Based systems (RVRB), case mix, MS-DRGs, healthcare insurance, and accountable care organizations. (TN Reading 2, 4, 7, 9; TN Writing 4, 6, 9)
- 23) Differentiate between medical nomenclatures and classification systems used for reporting to third-party payers for reimbursement, for data collection, and for education and research. Identify the components of the coding systems, including but not limited to: DSM, CPT, ICDH, HCPCS Level II, CDT, NDC, ICD-9-CM, and ICD-10-CM. (TN Reading 1, 2, 8, 9; TN Writing 8)
- 24) The Centers for Medicare and Medicaid Services (CMS) developed the prospective payment System (PPS), payment systems, fee schedules, and exclusions. Explain the payments systems of third-party payers as related to the types of forms they use. Develop a written or visual presentation explaining the differences among the payment systems. (TN Reading 6, 7, 8; TN Writing 4, 6, 8)
- 25) Compare and contrast the following types of data sets related to medical coding and/or reimbursement: OASIS, HEDIS, UHDDS, DEEDS and MDS 3.0. Explain in an informational text the development of, purpose, advantages, challenges, and health care setting in which each might be used. (TN Reading 2, 3, 4; TN Writing 2, 4, 9)
- 26) Practice the introductory skills related to coding for diagnosis using the ICD-9 or ICD-10 coding system and CPT coding system for procedures. (TN Reading 3, 4; TN Writing 7, 4)
- 27) Define the terms related to billing and coding fraud and abuse. Evaluate multiple scenarios to identify fraud and/or abuse and explain how they can be avoided. Cite specific regulations

and/or laws from the Fair Debt Collection Act, HIPAA, and the Privacy Act in the explanation. (TN Reading 1, 2, 4; TN Writing 4, 9)

Standards Alignment Notes

*References to other standards include:

- TN Reading: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Reading Standards for Literacy in Science and Technical Subjects 6-12; Grades 11-12 Students (page 62).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standard 10 at the conclusion of the course.
- TN Writing: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12; Grades 11-12 Students (pages 64-66).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standards 1, 3, and 10 at the conclusion of the course.
- TN Math: [State Standards for Mathematics](#); Math Standards for High School: Numbers and Quantity, Statistics and Probability.
 - Note: The standards in this course are not meant to teach mathematical concepts. However, the concepts referenced above may provide teachers with opportunities to collaborate with mathematics educators to design project-based activities or collaborate on lesson planning. Students who are engaging in activities listed above should be able to demonstrate quantitative and statistical reasoning as applied to specific technical concepts. In addition, students will have the opportunity to practice the habits of mind as described in the eight Standards for Mathematical Practice.
- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
 - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.